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TECHNICAL OPERATIONS RESEARCH

DASA-1800-II

DEPARTMENT OF DEFENSE
LAND FALLOUT PREDICTION SYSTEM

Volume II - Initial Conditions

TO-B 66-44

30 September 1966

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This research has been sponsored by the
Defense Atomic Support Agency
under NWER Subtask A7a/10.058

Submitted to

U. S. Army Nuclear Defense Laboratory
Edgewood Arsenal, Maryland

Burlington, Massachusetts

A survey of the literature to determine mass percent of active material observed in fallout has revealed that most of the mass and most of the activity are associated with particles in the large particle size range of the size-frequency distribution. For this reason, and since on the average there is only a slight tendency for specific activity of gross fallout to change with particle size, we shall concentrate our attention here on the larger particles. Table 1 is a summary of the best data available for large particles. We see that an average of approximately 50% of gross fallout mass is associated with active material. Therefore, on the basis of the reasoning presented above, we can state with a reasonable degree of confidence that, on the average, less than 50% of the total soil burden is vaporized.

TABLE 1

SELECTED MASS AND ACTIVITY DATA FOR LARGE PARTICLES

Operation / Shot	Particle Diameter Range (μ)	Approx. Mass of Total Fallout in Size Range (%)	Approx. Mass of Total Fallout Associated with Active Material in Size Range (%)	Source of Data
REDWING Zuni	> 420	75	75	Ref. 20 Fig. 3.53-3.55 Table 3.17
REDWING Tewa	> 210	90	75	Ref. 20 Fig. 3.57-3.59 Table 3.19
JANGLE Uncle	> 210	—	15	Ref. 22 Table IV (Station E)
SUN BEAM Small Boy	200-1000	58	27	Ref. 27 Table 8.2*
SUN BEAM Johnie Boy	> 200	80	50	Ref. 28 Table 3.17
AVERAGES		76	48	

*Only data from collection stations in the heavy fallout area were considered. These were stations 305, 405, and 503.

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